

AMENDMENT TO THE CLAIMS

1. (Currently amended) A glass-melting furnace comprising:  
an upstream melting end, a downstream fining end through which molten glass is discharged, and a roof, the upstream end being positioned upstream of the downstream end in the glass-melting furnace;  
a charger supplying glass-forming material to the upstream end of the glass-melting furnace;  
at least one burner supplying heat to the glass-forming material at the upstream end of the glass-melting furnace; and  
an exhaust positioned at the downstream end of the glass-melting furnace and in communication with the downstream end of the furnace so that combustion gases in the glass-melting furnace are exhausted only from the exhaust at the downstream end of the glass-melting furnace, the exhaust further being positioned downstream of the at least one burner.
2. (Currently amended) The glass-melting furnace of claim 1 in which the at least one burner is mounted through the roof of the glass-melting furnace.
3. (Original) The glass-melting furnace of claim 1 in which the at least one burner is a plurality of burners.
4. (Original) The glass-melting furnace of claim 3 in which more than 50 percent of the burners are positioned upstream of the exhaust.
5. (Original) The glass-melting furnace of claim 4 in which all of the burners are positioned upstream of the exhaust.

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6. (Original) The glass-melting furnace of claim 1 in which the exhaust is an exhaust stack.

7. (Original) The glass-melting furnace of claim 1 in which the exhaust is a plurality of exhaust stacks.

8. (Currently amended) The glass-melting furnace of claim 1 in which the exhaust is disposed at a discharge end wall of the glass-melting furnace.

9. (Currently amended) The glass-melting furnace of claim 1 in which the exhaust is disposed at a sidewall of the glass-melting furnace.

10. (Currently amended) The glass-melting furnace of claim 1 in which the at least one burner is a plurality of burners mounted through the roof of the glass-melting furnace, all of the burners are positioned upstream of the exhaust outlets, and the exhaust comprises at least two exhaust outlets.

11. (Original) The glass-melting furnace of claim 10 in which the exhaust outlets are a plurality of exhaust stacks.

12. (Currently amended) A glass-melting furnace comprising:  
an upstream melting end having a charge end wall and a downstream fining end having a discharge end wall through which molten glass is discharged, the upstream end being positioned upstream of the downstream end in the glass-melting furnace;

an exhaust in communication with the glass-melting furnace, the exhaust having a centerline that is positioned at least about 70 percent of the distance from the charge end wall of the glass-melting furnace to the discharge end wall of the glass-melting furnace so that combustion gases in the glass-melting furnace are exhausted only from the exhaust having its centerline positioned at least about 70 percent of the

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distance from the charge end wall of the glass-melting furnace to the discharge end wall of the glass-melting furnace.

13. (Currently amended)            The glass-melting furnace of claim 11 in which the exhaust centerline is positioned at least about 80 percent of the distance from the charge end wall of the glass-melting furnace to the discharge end wall of the glass-melting furnace.

14. (Currently amended)            The glass-melting furnace of claim 12 wherein the glass-melting furnace comprises two sidewalls and two exhausts, each exhaust being separated laterally from the sidewalls.

15. (Currently amended)            In a glass-melting furnace having an upstream melting end with a charge end wall and a downstream fining end with a discharge end wall through which molted glass is discharged, the upstream end being positioned upstream of the downstream end, the improvement comprising: an exhaust in communication with the glass-melting furnace at the downstream end of the glass-melting furnace so that combustion gases in the glass-melting furnace are exhausted only from the exhaust in communication with the glass-melting furnace at the downstream end.

16. (Original)            The glass-melting furnace of claim 15 wherein the exhaust is disposed at the discharge end wall.

17. (Original)            The glass-melting furnace of claim 15 wherein the exhaust comprises an exhaust stack.

18. (Original)            The glass-melting furnace of claim 15 wherein the exhaust comprises a plurality of exhaust stacks.

19-26. (Cancelled)

27. Currently amended)

A glass-melting furnace comprising:

an upstream melting end and a downstream fining end through which molten glass is discharged;

a charger supplying glass-forming material to the upstream end of the glass-melting furnace; and

at least one exhaust at the downstream end of the glass-melting furnace, wherein combustion gases in the glass-melting furnace are exhausted only from the at least one exhaust.

28. (Currently amended)

The glass-melting furnace of claim 27 in

which the at least one exhaust has a centerline that is positioned at least about 70 percent of the distance from the upstream end to the downstream end of the glass-melting furnace.

29. (Currently amended)

A glass-melting furnace comprising:

an upstream melting end and a downstream fining end through which molten glass is discharged;

a charger supplying glass-forming material to the upstream end of the glass-melting furnace;

at least one burner supplying heat to the glass-forming material at the upstream end of the glass-melting furnace; and

one or more exhausts positioned only at the downstream end of the glass-melting furnace and in communication with the downstream end of the glass-melting furnace so that combustion gases in the furnace are exhausted only from the downstream end of the glass-melting furnace.

30. (Currently amended)

The glass-melting furnace of claim 29 in

which the one or more exhausts have centerlines that are positioned at least about 70

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percent of the distance from the upstream end to the downstream end of the glass-melting furnace.

31. (Currently amended) A glass-melting furnace comprising:  
a melting zone first half, and a fining zone second half through which molten glass is discharged;  
a charger supplying glass-forming material to a charge end of the first half of the glass-melting furnace;  
at least one burner supplying heat to the glass-forming material in the first half of the glass-melting furnace; and  
at least one exhaust positioned at the second half of the glass-melting furnace and in communication with the second half of the glass-melting furnace with no exhaust positioned at the first half of the glass-melting furnace so that combustion gases in the glass-melting furnace are exhausted only from the second half of the glass-melting furnace.

32. (Currently amended) The glass-melting furnace of claim 31 ~~further comprising~~ wherein the first half defines a charge end and the second half defines a discharge end, the at least one exhaust having a centerline that is positioned at least about 70 percent of the distance from the upstream end to the downstream end of the glass-melting furnace.

33. (Currently amended) The glass-melting furnace of claim 31 in which there is the exhaust is structured to provide a pressure differential between the first half of the glass-melting furnace and the second half of the glass-melting furnace, wherein pressure in the second half of the glass-melting furnace is lower than pressure in the first half of the glass-melting furnace.

34. (New) The glass-melting furnace of claim 1 further at least one downstream burner supplying heat to the downstream fining end.

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35. (New) The glass-melting furnace of claim 34 in which the downstream burner is mounted in the roof.

36. (New) The glass-melting furnace of claim 35 in which at least one upstream burner is mounted at an angle of up to about 20 degrees to the vertical.

37. (New) The glass-melting furnace of claim 37 in which the downstream burner is mounted at an angle of up to about 20 degrees to the vertical.